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| APPLICATION NO.       | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------|-------------|----------------------|---------------------|------------------|
| 10/779,829            | 02/17/2004  | Markus Kirchner      | 448-001             | 9147             |
| 50760                 | 7590        | 07/29/2005           | EXAMINER            |                  |
| NEIL F. MARKVA        |             |                      | DEB, ANJAN K        |                  |
| 8322-A TRAFORD LANE   |             |                      | ART UNIT            |                  |
| SPRINGFIELD, VA 22152 |             |                      | PAPER NUMBER        |                  |
|                       |             |                      | 2858                |                  |

DATE MAILED: 07/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/779,829

Applicant(s)

KIRCHNER ET AL.

Examiner

Anjan K. Deb

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 7-13 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 14-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-17 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 04/27/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election of claims 1-6, 14-16 in the reply filed on 06/02/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Consequently, claims 7-13 and 17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group of invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 06/02/2005.

### *Abstract*

2. The abstract of the disclosure is objected to because it exceeds 150 words and for using legal phraseology often used in patent claims, such as "means". Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

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Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 6, 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Rundo (US 6,501,281 B1).

Re claims 1,6,14 Rundo discloses an operator-sensing circuit having a charge-transfer sensor that sends a sensor charge signal to a capacitive sensing electrode and receives a

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discharge signal from the electrode for disabling the motor of a unit of power equipment upon the absence of an operator's hand on a hand-gripping surface of the equipment, the electrical characteristic comprising: capacitive means for operating within a predetermined output capacitor discharge range that includes preselected binary digit values (logic high and logic low)(see abstract, line 7) that designate hands-off and hands-on conditions on the hand-gripping surface (presence or absence of an operator's hand, see abstract, lines 10-11), said capacitor discharge range (first level to a second level)(see abstract, lines 18-20), is effective to distinguish between the presence of an operator's hand and foreign material (sensed object composition) (column 5 lines 19-23) on the gripping surface for avoiding a false hands-on signal. Since Rundo disclosed sensing object composition it is clear to the examiner that it is able to distinguish between the presence of an operator's hand and foreign material based on sensing object composition.

Re claim 2, Rundo discloses capacitive means includes operator-hand sensing electrode means (120a, 120b) having an inner dielectric material layer 40 contiguously disposed on a metal handle portion of the power equipment 10 (Fig. 1), a metal conductor material layer (120a)(Fig. 2) contiguously disposed on the dielectric material, and an outer dielectric hand-grip material (121) including said hand-gripping surface thereby producing a capacitance in a grasping operator's hand, outer hand-grip material, and the metal conductor material layer (120a) includes metal foil wrapped (metal conductor material comprising 22 gauge copper bus wire) (column 5 lines 52-55) (cylindrical shaped conductive mesh or grid as in Fig. 3)(column 8 lines 37-53) around said inner dielectric material (column 5 lines 25-62).

Re claim 14, Rundo discloses method of sensing the presence of an operator's hand on a gripping surface (grip 42) of a power equipment (Fig. 1) unit and causing cessation of operation of a component system of the equipment if the operator's hand is removed from the gripping surface comprising, the steps of:

a) providing a sensing electrode (120a, 120b) affixed to said gripping surface that includes a capacitive means for operating within a predetermined output capacitor discharge range including preselected binary digit values (logic high and logic low) (see abstract, line 7) that designate hands-off and hands-on conditions on the hand-gripping surface (column 4 lines 32-58);

b) said capacitor discharge range is effective to distinguish between the presence of an operator's hand and foreign material (sensed object composition) (column 5 lines 19-23) on said gripping surface for avoiding a false hands-on signal;

c) said capacitor discharge range includes a hands-off section in which foreign materials (sensed object composition) (column 5 lines 19-23) add capacitance to the hand-gripping surface that may produce a false hands-on condition, and a hands-on section in which the operator's hand is grasping the hand-gripping surface and provides accurate capacitor discharge digit value that allows the power equipment continued operation;

d) providing a charge-transfer sensor (130) electrically coupled to the sensing electrode (120a, 120b)(column 5 lines 25-28);

e) providing microcontroller (QT 110)(Fig. 5) means electrically coupled to the charge-transfer sensor for periodically commanding the sensor to transfer charge to the sensing electrode

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(120a, 120b) that senses the quantity of charge on the sensing electrode and generates a raw data output signal to the microcontroller means when the quantity of charge on the sensing electrode is sensed (column 6 lines 30-40);

f) processing (computes)(column 6 lines 29-33) the raw data output signal in said microcontroller (QT 110)(Fig. 5) means to determine if the quantity of charge on the sensing electrode is in said true hands-on section of the capacitor range (column 6 line 60 to column 7 line 20).

g) said microcontroller means (QT 110)(Fig. 5) is electrically coupled to said component system (350) of the equipment (ELECTRIC MOTOR) (Fig. 5) and causes cessation of operation of the component system when the raw data output signal of the charge-transfer sensor indicates that the quantity of charge is not within the true hands-on section of said capacitor discharge range (column 6 line 60 to column 7 line 20).

Re claims 15,16 Rundo discloses shutting off (grounding magneto in internal combustion engine or by interrupting the supply of power to an electric motor)(column 9 lines 7-10) mobile power equipment based on quantity of charge is not within the true hands-on section of capacitor discharge range (first level to a second level)(see abstract, lines 18-20), wherein mobile power equipment comprises internal combustion engine or an electric motor (column 9 lines 6-20) (Fig. 5).

*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rundo (US 6,501,281 B1) in view of Harris (US 2,725,548 A).

Re claims 3-5, Rundo discloses all of the claimed limitations as set forth above including metal conductor material comprises 22 gauge copper wire (column 5 lines 52-55) except metal foil layer having a thickness of about 0.10 mm to about 0.15 mm having the structural configuration of a tube having a longitudinal axis and that extends along a delimited length of the inner dielectric material tube.

Harris discloses variable-capacitor transducer comprising cylindrical (tube) metal foil 52 over a dielectric core for forming a capacitance sensor (Fig. 4).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Rundo by adding a metal foil layer disclosed by Harris for forming an electrode of a capacitance sensor and having a specified thickness of about 0.10 mm to about 0.15 mm and having the structural configuration of a tube having a longitudinal axis that extends along a delimited length of an inner dielectric material tube so as to form a tubular electrode instead of the spiral wire type electrode disclosed by Rundo for forming the capacitance electrode with



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increased surface area for increased sensitivity and having the specified thickness for mechanical strength and increased durability.

### *Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Glaeser (US 4,814,632 A) discloses safety device for an apparatus comprising capacitive proximity sensor said apparatus being capable of being switched off when the operator action on the operating sensor stops.

Kovarik (US 20030202851 A1) discloses capacitance type sensor (proximity detector) for power hand tool.

Morimoto (US 6,894,507 B2) discloses capacitance type touch sensor comprising metal foil electrode.

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*Contact Information*

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Anjan K. Deb whose telephone number is 571-272-2228. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lefkowitz Edwards can be reached at 571-272-2180.



**Anjan K. Deb**

Patent Examiner

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7/28/05

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